

When Recycling Is Bad for the Environment

Recycling plastic is tricky business, and many plastics are better off as garbage.

By [Rachel Cernansky](#) | Monday, July 06, 2009

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You just polished off some yogurt and, because of that [chasing-arrows symbol](#) on the bottom of the container, you assume it should go in the recycle bin. Right?

Not necessarily.

Glass, metal, and paper are pretty straightforward, but when it comes to plastic, things get tricky. The truth is that what you can recycle depends on where you live and what materials your city's facilities can handle. There are many different types of plastic, and they cannot all be recycled together. So unless you're diligent about sorting all your plastics, then "recycling" that yogurt container may be doing more harm than simply throwing it away.

Recycling is generally far better than sending waste to landfills and relying on new raw materials to drive the consumer economy. It takes [two-thirds less energy](#) to make products from recycled plastic than from virgin plastic. By the last official measure in 2005, Americans recycle an estimated [32 percent of their total waste](#), which averages nearly a ton per person per year, around a third of which is plastic. Our recycling efforts save the greenhouse gas equivalent of removing [39.6 million cars from the road](#).

But not all plastic can be recycled, and only about [6.8 percent](#) of the total plastic used in the U.S. actually goes that route—although the rate is higher with bottles: 37 percent for soft drink and 28 percent for milk and water bottles.

The chief problem lies in plastic's complexity: There are as many types of plastic as there are uses. And since each type can only be recycled with its own kind, plastics need to be carefully sorted before they can be processed. The presence of enough foreign materials—from food to dissimilar kinds of plastic—can ruin an entire batch of would-be recyclables.

Plastics are chemically categorized by numbers, which are displayed inside the chasing-arrow icon on many plastic containers. The two most common types are plastic #1 (polyethylene terephthalate, or PETE), which is used mainly in soda and water bottles, and #2 (high-density polyethylene, or HDPE), used in things like detergent bottles and milk jugs. Unfortunately, while plastics marked #1 or #2 are generally considered to be recyclable, not all containers with those numbers actually are.

The reason for this is that many plastics contain additives blended into the original resin, and the different additives create discrepancies even within each category. Every container in the grocery store is made with a unique blend of chemicals—plasticizers, molding agents, dyes—that combine to give a plastic its shape, color, strength, and flexibility (or lack thereof). As a result, they melt at varying temperatures and respond differently to new additives, and so they cannot all be melted down and recycled together to make a new product.

As a result, most plastic, aside from the ubiquitous clear plastic bottle, cannot, generally speaking, be recycled by most municipalities. This problem applies to the #1s and #2s, as well as yogurt containers or hummus tubs, and Chinese-takeout containers, which are usually made from #5 plastic. (It also includes plastic bags and the frustratingly hard plastic packaging that your headphones came in, which don't even earn a recycling number.) But many people don't know that, so they toss all of them in the blue bin, thereby reducing efficiency at the sorting plant, which is where your plastic goes when it's collected on recycling day.

Sorting is a crucial part of the recycling process. Plastic sorting can be done manually, but it's tedious and labor-intensive. Automatic sorting is far more efficient, but the technology is not foolproof: There are so many types of plastics that sorting equipment can't look for all possible additives in the materials passing through. (Ironically, the increasing use of bio-plastics—which are made from renewable materials like

cornstarch and are meant to be more earth-friendly than conventional oil-based plastic—has made the job of automatic sorting machines even harder.)

Any contamination in the recycle bin compromises the strength and durability of the recycled plastic that is produced, which in turn compromises its future use as a material for manufacturers. A recycled container needs to be strong enough to hold the weight of the contents inside, and many container shapes already contain weak spots where the plastic has a reduced thickness—near a bottle's handle, for example.

While all these complications make it difficult to produce containers with a high percentage of recycled plastic, some companies are still taking on the challenge. Seventh Generation, a company that makes eco-friendly household products, is increasing the recycled content of all its packaging, with a goal of 75 percent for all products by the end of the year.

But Seventh Generation is an exception to a widespread industry trend. It is virtually impossible to calculate the industry average for how much recycled plastic goes into packaging, according to Tom Outerbridge, director of municipal recycling for Sims Metal Management, a metals and electronics recycling company. Without a built-in environmental ethic like the one Seventh Generation has, individual companies are inconsistent in their use of recycled content, and can use anywhere from zero to 100 percent recycled plastic in their products. But when the quality of the recycled plastic goes down, so does that percentage.

So if you're wondering if you should continue to recycle your plastics, here's an answer: Yes. But before you do, educate yourself on which plastics your city collects, and bring other types to outlets where they can be properly sorted. If you're unsure about a plastic—an old CD jewel boxes, perhaps, or Saran Wrap—then putting it in the bin and hoping it will be recycled anyway does nothing for the environment. It's going to be thrown into the garbage after an elaborate and costly sorting process, so you might as well just toss it out yourself.

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